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**THE ABORIGINES OF THE DISTRICT OF COLUMBIA
AND THE LOWER POTOMAC—A SYMPOSIUM, UNDER
THE DIRECTION OF THE VICE PRESIDENT OF SEC-
TION D.**

INTRODUCTION.

BY OTIS T. MASON.

The proposal has been frequently made to prepare a series of monographs upon the natural history of the District of Columbia. Already have appeared Ward's *Flora of the District*, Coues and Prentiss' *Avifauna of the District*, and a small pamphlet by Mr. Kengla on the archæology of the District. About nine years ago I read a paper before the Biological Society upon the human fauna of the District, including the aborigines, the early white settlers, and the present white and black population.

It has been my constant desire since then to enlarge this paper so as to compare the geological structure of this area with that of the Delaware valley, for instance; to note and describe residence sites, workshops, paint and soapstone quarries; to make a study of all the forms of stone implements found in this region and to rehabilitate them—that is, to collate them with their proper functions by means of hundreds of thousands of the implements and weapons of modern savagery which I have handled over and over again in the National Museum.

Finally, the occurrence of Arber's reprint of John Smith's works revived my anxiety to do for him what Colonel Yule has done for Marco Polo, though, I think, with much greater help to a correct conclusion.

Happily, the Anthropological Society of Washington, at its very first meeting, assumed the burden of attending to local history. The four sections of the Society each have a vice-president, who may, when expedient, call together those who are affiliated with him for special investigations.

This evening for the first time you are to enjoy the result of such a sectional meeting. The vice-president of the section of technology,

despairing of accomplishing unaided all that is to be desired with reference to the human fauna of the Potomac and Chesapeake tide-water region, a few months ago devised the plan of inviting the co-operation of members of our Society. The gentlemen responded promptly to the call, and it was decided to prepare first a series of short papers to be read before the society, and afterwards to make them exhaustive, so as to form a monograph, illustrated by appropriate maps and figures. Each gentleman who will read a paper to-night has been selected on account of his eminent fitness for the task.

You will first listen to a geological paper by Mr. W J McGee, who has devoted his studies to superficial geology, who prepared for the Survey its map of the United States, and who is perfectly familiar with the life history of every rock and pebble in the area under consideration. He has been requested to give us an account of the formation of this region, to show us why we are not to look for human remains or the relics of human art deep in the gravels, where the Trenton collectors find them, and to clear away any obscurities about the problem dependent upon our ignorance of the geological situation.

The second paper will be read by Mr. Thomas Wilson. A residence of five years in France, where he studied assiduously the archæology of Abbeville, of the Dordogne valley, the megalithic monuments, and the lake-dwellings of Switzerland, has quickened Mr. Wilson's apprehension of the importance of searching for evidences of palæolithic man all over our country. The speaker will endeavor to show you that palæolithic implements, of the same form as those of Europe, are found in our tide-water region, and under circumstances that leave no doubt in his mind of the occurrence here of a rude stone age long prior to the neolithic period of the modern Indians.

The third paper is by Mr. S. V. Proudfit, whose early education among the mounds of Iowa and whose persistent search in the District have made him familiar with every village site in our neighborhood. Mr. Proudfit will locate the sites so far as known and show you a collection of many hundreds of type specimens found thereon. You will be astonished, as I was, at the great variety of forms and the remarkable finish of many of them.

Mr. Holmes will read the next paper, on the pottery and textiles of the region. He has discovered a process by which the markings upon the smallest fragment of pottery may be made to instruct us in the apparatus used by the potter, as well as in the material and stitch used by the weaver and the embroiderer.

The fifth paper is by Dr. Elmer Reynolds, on the shell-heaps of the Lower Potomac. From the brackish water of Port Tobacco to the mouth of the Bay the oyster abounds, and that it was a source of food supply to the aborigines is attested everywhere by immense shell-heaps, wherein are found human bones, pottery, and many stone implements. In many places the little circles that mark wigwam sites are also discoverable. Dr. Reynolds will present a short sketch of features the full description of which will occupy a volume.

The closing paper will be read by Mr. James Mooney, upon the Indians found in the Chesapeake region by John Smith, together with a description of their arts and affiliations.

As I stated previously, these gentlemen will give you only an outline of what will occupy a large volume when all the material is prepared ; but from the accounts they will present you will be able to reconstruct in your imaginations the whole period, commencing with the day when the first American aborigine set foot in the Potomac valley to that day when, two hundred years ago, almost the last savage was deported.

It may not be amiss to state that the vice-president of the section has invited other investigators to map the points of occupation and historic importance in our region during the War of 1812 and the late Civil War. The series of maps thus constructed, together with a careful census in 1890, will furnish one of the best examples of anthropological stratigraphy known.

THE GEOLOGIC ANTECEDENTS OF MAN IN THE POTOMAC VALLEY.

BY W J MCGEE.

Midway between the beginning and the end of geologic history, or about the middle of the Mesozoic in the chronology of the geologist, there was an episode whose influence was felt in later ages by the aborigines of the Potomac valley. Man was not yet: Indeed the bird was but newly born of the reptile and the mammal of the fish, under the miscegenation of evolution ; the dicotyledonous plant was just coming into existence and struggling against the primitive flora of the earth ; the Potomac river flowed near its present course, but the Appalachian mountains were higher and the river-banks more

rugged than to-day, and not only was the Colorado unborn, but even the formations in which it has carved its colossal bed were not yet laid down. It was millions of years ago. Yet we know that the Potomac river gathered bowlders and pebbles from the mountains during its freshets, and that the waves of the ocean swept along adjacent shores the pebbles of Blue Ridge quartzite from which paleolithic man subsequently fashioned his rude tools.

During later eons the mountains were cut down by the rivers, the ever-energetic Potomac carrying whole cubic miles of sand and mud into the ocean to build the broad bench of lowland stretching from Washington to the coast, and thus gradually displacing the waters; and as the land-surface was attacked by rain and rivers and its debris swept into the sea, the growing continent rose until even the pebbly beach of the middle Mesozoic became an upland, and most of its pebbles were swept away, only remnants being left to crown the river bluffs and divides. This period of transportation from mountain to sea was long. Within it the bird-reptile and the dinosaur gave place to a long line of progeny, closing with the bright-plumaged bird of to-day, the horse and ox, the stag and camel, the elephant and mastodon, and all the higher mammals, save, perhaps, man; the dicotyledonous plants spread over the earth; the continent was changed from a great mountain range in the east, passing down into a moorland bounded by the western archipelago, to its present configuration; the Rocky mountains and the Sierras were elevated; and the Colorado cañon was carved to nearly its present dimensions.

Then came the second episode, in which the archæologist of the Potomac valley is interested: The previously mild climate chilled, the winters lengthened, the ice froze thick in rivers and bays, a continuous mantle of ice swept down from the north so far as to cut off the headwaters of the Delaware, the Susquehanna, and the Ohio, and anon the land sank until ocean waters crept up the slopes flanking the Chesapeake and the Potomac, and finally swept over the hills among which the National Capital is now embosomed. The water-level stood long at 150 feet, a less time at 200 feet, and briefly at fully 300 feet above present tide-level, and the ice-charged Potomac dropped bowlders and mud within its expanded estuary, while the waves built terraces about the hill-tops. Whether this cold was felt by human skin and this submergence seen by human eyes, no man yet knows.

Although short to the geologist, the period following this ice epoch

was long. Its duration is measured by the excavation of the inner gorges of the Potomac from Georgetown to Great Falls and of the Susquehanna from Port Deposit to Chickies; and during this period a primitive human population spread over the land.

There is a third episode, which is just at hand to the geologist, though enveloped in the thick haze of remote antiquity to the archæologist: Once more the northern ice-sheet invaded the land, creeping down the Hudson to its mouth, well down the Delaware, and again cutting off the head-waters of the Susquehanna and the Ohio. During this episode man flourished, despite the rigorous climate, and left his relics in the debris accumulated almost at the ice front; but this episode of cold was shorter than the last, the land was but little depressed, and no traces of its effects are found on the Potomac river. At its end the "to-day" of the geologist dawned.

From these three episodes and the intervening periods a chronology may be constructed: The first episode is that of the deposition of what geologists call the "Potomac formation," and the subsequent interval covers the Cretaceous and Tertiary periods; the second episode is represented by the deposits constituting the "Columbia formation," and the subsequent interval is the interglacial period, the vast duration of which has only recently been recognized; and the third episode is represented by the newer glacial drift, the great terminal moraine, the terraces of the Connecticut and Hudson rivers, the Trenton gravels, and contemporaneous deposits, while the subsequent interval of 10,000 to 100,000 years is the post-glacial period. Other and important episodes there were, but these three stand out in the geologic chronology of the Potomac valley like great mountains upon a hilly plain. Let us estimate their remoteness in familiar units: If the whole period of written history be a yard, then 3 or 5 or 10 long strides will carry us over the post-glacial period to the third and nearest episode; at the same rate we must walk 3 to 20 rods to span the interglacial period and reach the second episode; and still at the same rate we must walk from dawn to dark of a long day to reach the first episode.

The geologist has restored the geography of the period during which the Potomac gravels were laid down, but the configuration of land and water was so unlike the present that it would not be useful to reproduce it in detail. It will suffice to say that the shore line was ten to fifty miles west of the line along which the cities of the

Atlantic slope—Richmond, Washington, Baltimore, Philadelphia, Trenton, and New York—are now located. The deposits were coarse gravels along shore, sands with intercalated pebble beds and clay partings in the shoal waters, and masses of sandy clay with intercalated beds of sand in the offing.

During the long post-Potomac interval the land alternately rose and fell, and with its oscillations the sea alternately retreated from and encroached upon it; but the rising always exceeded the sinking and the shore line ever withdrew by successive steps. As the land was elevated its surface was cut down, valleys were excavated, and different formations were successively exposed along the flanks of the growing continent. The lowest of these is the Potomac formation. As the land rose higher and higher its margin—the shore deposit of an earlier eon—was channeled by ravines, its finer materials swept away, and only remnants of it left in the form of gravel-capped hills overlooking the falls of the James, the Rappahannock, the Potomac, the Susquehanna, and the Schuylkill. These gravel-capped hills are the factory-sites of paleolithic man, and it is by reason of them that the archæologist is interested in the Potomac formation. The land continued to lift until somewhat before the depression of the Columbia period, when it stood higher than now, and the Potomac, the Susquehanna, the Delaware, and the Hudson flowed in deep valleys through what is now the coastal lowland to far beyond the present coast line; but otherwise the geography was much the same as to-day.

During the Columbia period, or the first epoch of ice advance, the geography of eastern United States was greatly modified; and the configuration of the time may be readily depicted in terms of that of the present: To-day there is a lowland plain rising gently from the Atlantic and stretching mountainward to the elbow of the Delaware at Trenton and Philadelphia, to the embouchure of the Susquehanna into Chesapeake Bay, to the great elbow of the Potomac at Washington and Alexandria, to Fredericksburg, and to the bend of the James at Richmond. This lowland plain widens from a point at Sandy Hook to 150 miles at Cape Hatteras. Still further westward there lies an upland plain, 10 to 100 miles wide, overlooking the lowlands and overlooked by the mountains. Along the common boundary of the lowlands and the uplands the land surface drops from a mean altitude of 300 feet to less than 100 feet, and the rivers cascade from narrow rock-bound gorges into broad tidal

estuaries. Now, during the Columbia period, ocean-water overwhelmed nearly all of the lowlands between the present coast and the fall-line and washed the upland margin where now stand Fredericksburg, Washington, Baltimore, and Philadelphia; and north of Philadelphia it swept still further inland, submerging the uplands to 300 and even 450 feet above present tide level. Then the Potomac embouched into open ocean at the "Three Sisters;" at the culmination of the submergence shoal ocean-waters rolled over the highest land between Washington and the coast, and the Anacostia, the Patuxent, and Chesapeake bay were not; while during even the inferior stages of water the lower Potomac was an estuary many times broader and deeper than to-day. Such was the geography of the Columbia period.

The deposits of the Columbia period were the boulder beds, gravels, and overlying brick clays exposed in every street cutting and cellar excavation in Fredericksburg, in Washington, in Baltimore, and in Philadelphia. They are best developed in what were the bottoms of estuaries when the water rose 150 feet at Washington and 200 feet or more at Philadelphia above present tide level; but while the Columbia formation consists predominantly of estuary deposits, a thinner sheet of this formation overspreads the lowlands everywhere from the line of cascades to the coast. Within the Columbia deposits there are abundant well-worn quartzite pebbles derived from the Potomac formation from which paleolithic implements might well have been fashioned; but no relics of man have ever been found—unless, indeed, Cresson's paleolithic implements from Northern Delaware were imbedded within them.

With the retreat of the great ice-sheet the land rose slowly and the waters gradually retreated until the previous configuration of the land and sea was in part restored; but the face of the emerging land was changed: Not only was the surface mantled and the valleys clogged with sediments, but the country was cleft for 300 miles by a profound break or displacement by which the lowlands were lowered and the uplands lifted. This displacement of the surface and the strata extends from the Potomac to the Hudson, and every river crosses it in a cascade; and the displacing is yet in progress—so slowly, it is true, that man has scarcely measured its rate, but so rapidly that the ever-busy rivers are unable to keep pace with it, and either cut down their upland gorges to tide level or silt up their lowland estuaries.

It is probable that some time during the long interglacial period, man, or his immediate progenitor, appeared and spread along the coasts and the rivers and over the uplands; but not until the second ice-invasion concentrated the fish of the rivers, the birds of the air, and the beasts of the forest and plain about the edge of the great ice-field did early man congregate in such numbers and lose the products of his arts in such abundance as to leave a record of his existence and his stage of culture. Man may be defined as the *fuel-using animal*; and it is one of the most significant facts of archæology that the record of human activity began, not in the mild spring-time, nor yet during the torrid midsummer, nor even in the fruitful autumn of the great secular seasons of the earth, within which mammalian life culminated in unparalleled wealth and magnitude of forms, but rather under the rigors of a secular winter. It is equally significant that the earliest traces of man in America are found, not beneath the sunny skies of the tropics but along the line shadowed by the Pleistocene ice-front. Perhaps paleolithic man was born during the interglacial period; but his birth-entry has been blotted from the records now accessible, and only the death-entry of some of his kin appears in the Trenton gravels of the Delaware, in the glacial gravels of the Ohio, in the terrace gravels of the Mississippi, and in the glacial mud of the Missouri—all deposits of a period during which the conditions were such as to give supremacy to the *fire-using animal*.

On the Potomac river paleolithic man has left traces, but they are not such as to fix the date of his occupancy of its shores. From the quartzite pebbles crowning the hilltops about Rock creek he manufactured thousands of implements, but he did not begin the manufacture until after the end of the Columbia submergence, else the implements would be found in the deposits. All along the Potomac the rude paleolith and the finished arrow lie alike upon the surface or in modern alluvium, and the geologist can only say that both are post-Columbia. From his own standpoint he can say nothing as to the development of the higher cultural phase from the lower, nor even as to the relative antiquity of the two. It seems probable indeed that the quartzite paleoliths of Rock creek were made long before the days of the arrow-makers whose relics skirt the shores of the Potomac and the Anacostia. At the same time it seems improbable that paleolithic man began to fashion quartzite implements from the Potomac gravels as early as his elder brethren began to manufacture

argillite implements on the shores of the Delaware ; for, although the paleolith is easily and economically broken from argillite, it is only with difficulty and extravagance of labor that it may be chipped from quartzite pebbles, and the quartzites of the Potomac thus attest the potency of an imported fashion probably set on the Delaware. And the pendulum of progress swung slow in the infancy of the race ; a century of that age was like unto a day of this ; and so the quartzite-worker of the Potomac might have been thousands of years younger than the argillite-worker of the ice-front. But most of the paleoliths of the Potomac valley have been irrecoverably lost in consequence of the break by which the coastal lowlands were set off from the uplands : In the days of their manufacture the hills flanking the lower gorge of the Potomac were lower than now, and the implement-maker did not climb so high to his workshop as the collector climbs to-day ; while the lowlands were higher and the estuaries narrower than to-day, and the shores haunted by the implement-user are now overrun by the tide and the lost implements buried in wave-swept alluvium.

Through the Potomac valley passes one of the most strongly marked geologic and cultural boundaries on the face of the earth : It was the shore-line during the later part of the Potomac period, and again during the eons of Cretaceous and early Tertiary deposition ; it was again a shore-line during the first ice-invasion, the deposition of the Columbia gravels and brick clays, and the fashioning of the Columbia terraces ; and it was the line of earth-fracture by which the coastal lowlands are dropped below the Piedmont uplands. It is known to students of modern manufactures as the *fall-line* because along it the rivers descend as abruptly as the land ; and it is even more notable as a line of deflection than as one of declivity in rivers. The great waterways of the Middle Atlantic slope maintain their courses through Appalachian ranges and Piedmont hills alike ; but on reaching the coastal lowlands they are turned aside literally by a sand bank little higher than their depth, and thence hug the upland margin for scores of miles before finally finding their way into the ocean. So the coastal lowlands are nearly isolated by the tidal bays and river-elbows along their inner margin. Measured along the fall-line, the Hudson is barred from the Rappahannock, 300 miles southward, by only 60 miles of land and unnavigable water. This remarkable physiography is now and ever has been reflected in the culture of the region. The pioneer settlers of the country ascended the tidal canals to the falls

of the rivers, where they found, sometimes within a mile, clear, fresh water, the game of the hills and woodlands, and the fish and fowl of the estuaries, and, as the population increased, abundant water-power and excellent mill-sites, easy ferriage, and practicable bridge-sites; here the pioneer settlements and villages were located; and across the necks of the inter-estuarine peninsulas the pioneer routes of travel were extended from settlement to settlement until the entire Atlantic slope was traversed by a grand social and commercial artery stretching from New England to the Gulf States. As the population grew and spread, the settlements, villages, and towns along the line of Nature's selection waxed, and many of them yet retain their early prestige; and the early stage-route has become a great metropolitan railway and telegraph route connecting North and South as they were connected of old in more primitive fashion. And just as these natural conditions influenced the white invader, so, and even more strongly, must they have influenced the migrations, settlements, industries, and character of the aboriginal monarchs of the Potomac waters and woodlands.

In the later geology of the Middle Atlantic slope, three episodes stand out so strongly as to overshadow all others. The first is that represented in the Potomac formation; the second is that of the first ice-invasion and the deposition of the Columbia formation; the third is the shorter ice-invasion, during which the earliest known relics of man were entombed in aqueo-glacial deposits; and then follows the present, by which these episodes of the past are interpreted and measured. In the archæology of the Potomac valley there are three salient and distinct stages, the first nearly coinciding in time with the last geologic episode. The first stage is that of the origin and development of the unknown ancestor of the race; the second stage is that of the human prototype who manufactured and used rude implements in an unknown way and for unknown purposes; the third stage is that of the dominance of savage races whose homes and habits, implements and weapons, are known; and there is the present stage of multifarious characteristics, one of which is the desire to interpret and elucidate the earlier stages. The common ground of the archæologist and geologist lies about where the series of stages in the development of man overlaps upon the series of episodes in the development of the earth. It is this common ground which is surveyed in these paragraphs.

THE PALEOLITHIC PERIOD IN THE DISTRICT OF COLUMBIA.

BY THOMAS WILSON.

During the thousands of years covered by the historic period the world has remained in ignorance of the prehistoric races of man which occupied the territory now belonging to our civilization. Although prehistoric implements and monuments were widely disseminated and to be seen on every hand, yet they remained unrecognized.

In the first decade of the XIX century the Danish savants, in their study of the Runic characters belonging to the early history of their country, discovered evidences of a human occupation earlier than any previously known. Their investigations developed facts which were accepted by the world at large, and the Prehistoric Ages of Man were soon classified as the Ages of Stone, Bronze, and Iron. The Stone Age was afterwards subdivided into the Paleolithic (ancient) and Neolithic (recent) periods. In the United States the Iron Age belongs entirely to history, and the Bronze Age, as such, had no existence. Our American Indian when found by the European was in the Neolithic Stage.

The branch of the subject assigned to me in this discussion is the existence of the Paleolithic Period of the Stone Age in the District of Columbia.

It is not every chipped stone that belongs to the Paleolithic Period. The implements of this period are of a particular type, and have individuality of form ; so that the expert can distinguish them from implements of subsequent epochs or periods, even when of similar material and mode of manufacture.

The question under discussion is one of great importance, for it involves the existence of a people quite unknown, and their occupation of our country at a period in antiquity hitherto unsuspected. I grant that evidence of this period in Europe does not prove a like period in America. The problem in each continent must be worked out from independent evidence. No mere theory governing this conclusion in Europe should govern in America ; but if the evidence that has proved the proposition in Europe is found in America, then it should be entitled to the same weight.

It is a fact, important in this discussion, that in those European countries most occupied by paleolithic man implements kindred to those found in the river gravels and belonging to the same epoch

have been found *on the surface* associated with objects of subsequent periods.

In investigating evidence of the existence of a paleolithic period in America the first question is, admitting, as we must, the existence of such a period in Europe, do we know any reason why it might not have existed in America? I can see no reason. If similar implements are found in America and in Europe, if they are found in similar positions and under similar conditions, I know of no reason why they should not establish, or at least point to, the same conclusion in America as in Europe.

In America, as in Europe, our only knowledge concerning the paleolithic period is necessarily derived from the implements themselves and from their position and surroundings when found. We have neither oral nor written evidence, nor have we tradition, concerning the implements or the people who made and used them. They belong to a period of geologic time which our most definite knowledge in America connects, as at Trenton, with the second glacial epoch.

Paleolithic implements have been found in the United States which correspond in every particular with those of Western Europe—correspond in form, appearance, material, mode of manufacture—in short, they are the same implements in every essential. They have been found under substantially the same conditions—sometimes on the surface, sometimes deep in the river gravels. We have heard from Mr. McGee how these implements were imbedded in the river gravels at Trenton, and his opinion is that their antiquity dates to the glacial epoch. (See also his article in *Popular Science Monthly*, XXXIV, 1888.) Little Falls, Minn.; Jackson county, Indiana; Claymont, Delaware; Loveland, Ohio, and other localities tell the same story and furnish the same evidence.

These finds of proved antiquity are in great numbers, and they demonstrate both the existence and the antiquity of a paleolithic period in America. This cannot longer be doubted. It is the conclusion of all the scientists who have studied the question. I have mentioned Professor McGee. It goes without saying that Dr. Abbott believes it. Professor Putnam was one of its earliest believers. Professors Wright and Haynes have given it their adhesion, and so have all the geologists who have examined the localities where the implements have been found. Professor Haynes, of Boston, prepared Chapter VI, entitled "The Prehistoric Archaeology of North Amer-

ica," and just published in the Narrative and Critical History of America, page 329. He (with Professor Putnam) recognized the great importance of the finds of these paleolithic implements by Dr. Hilborne T. Cresson at a depth of several feet in the undisturbed ancient gravel terrace of the Delaware river, near Claymont, Newcastle Co., Delaware. The artificial origin of these implements appears upon inspection. They repeat the punch marks, the hammer strokes, the conchoidal fracture, all of which combine to shape them for a general purpose and to show conclusively that they are the work of man. It is the repetition of these items of testimony in hundreds and even thousands of specimens that makes the evidence so convincing.

Mr. McGee, in his article on "Paleolithic Man in America," in Popular Science Monthly, XXXIV, 1888, speaking of the Trenton implements, gives his opinion thus: "When examined collectively, the correspondence in form and mode of manufacture between symmetric 'turtle-backs,' 'failures,' 'spawls,' 'chips,' and miscellaneous fragments compels the cautious geologist to question whether *any are demonstrably or even probably natural*; the series is not from the certainly natural to the doubtfully artificial, but from the *certainly artificial* to the *doubtfully natural*." (Italics my own.)

Implements similar to those referred to have been found by thousands in the District of Columbia, as well as all over the United States, and I have ventured to call them paleolithic. True, they have been found principally upon the surface or in the alluvium which is its equivalent. They are not presented as furnishing complete proof of the *antiquity* of the paleolithic period, but they have been found *in situ*. They are part of the *res geste* and must be accepted as evidence in the case, tending, at least, to establish the *existence* of a paleolithic period in the District of Columbia.

That the implements found in the District of Columbia and the Potomac valley, illustrated in Plates I and II, were of human manufacture, and that they belong to the paleolithic period, can be demonstrated by comparing them, 1st, with one another; 2d, with like implements found in the river gravels in the United States; 3d, with like implements found in other countries, both in the gravels and on the surface.

The details of this comparison would extend to—

Form and appearance; material; mode of fabrication; use and purpose.

In contrast to the similarity of paleolithic implements will be found an equally marked dissimilarity of implements belonging to the neolithic period, whether of Europe or of America, extending to details of appearance, mode of fabrication, material, and purpose. The wider the geographic range of this comparison and the more minute its details, the more conclusive it becomes. For instance, if, instead of confining our comparison to paleolithic implements from the District of Columbia, we include those from all over the United States; and if, instead of comparing them with like implements from England and France, we extend our comparison to those from Africa and India, we find them all alike, and consequently all are true paleolithic implements.

PALEOLITHS OF THE UNITED STATES COMPARED.

Similarity of Form and Appearance.—Paleolithic implements from the District of Columbia, indeed from all over the United States, are always chipped, never polished; are almond-shaped, oval, or sometimes approaching a circle; the cutting edge is at or towards the smaller end and not, as during the neolithic period, towards the broad end. They are frequently made of pebbles, the original surface being sometimes left unworked in places, (see *b* and *c*, Plate II), sometimes at the butt for a grip, sometimes on the flat or bottom side, and sometimes, in cases of these pebbles, on both sides. The differences between the natural and artificial portions are readily distinguishable.

These implements are exceedingly thick compared with their width, so much so as to make it apparent that they were never intended to have a shaft or handle after the fashion of either the axe or the arrow or spear head. This statement does not apply solely to the larger implements, weighing several pounds; for there are small ones of varying sizes perfect in themselves with an evidently intentional protuberance which renders hafting impracticable.

The above-noted features bring into greater prominence the important fact that the implements are all of a common type. They are all alike, and yet not alike. They are not copies, yet there is no mistaking their likeness to each other. When this likeness is found to extend to thousands of implements, coming from every part of the United States, it produces in the mind of the examiner a conviction impossible to escape.

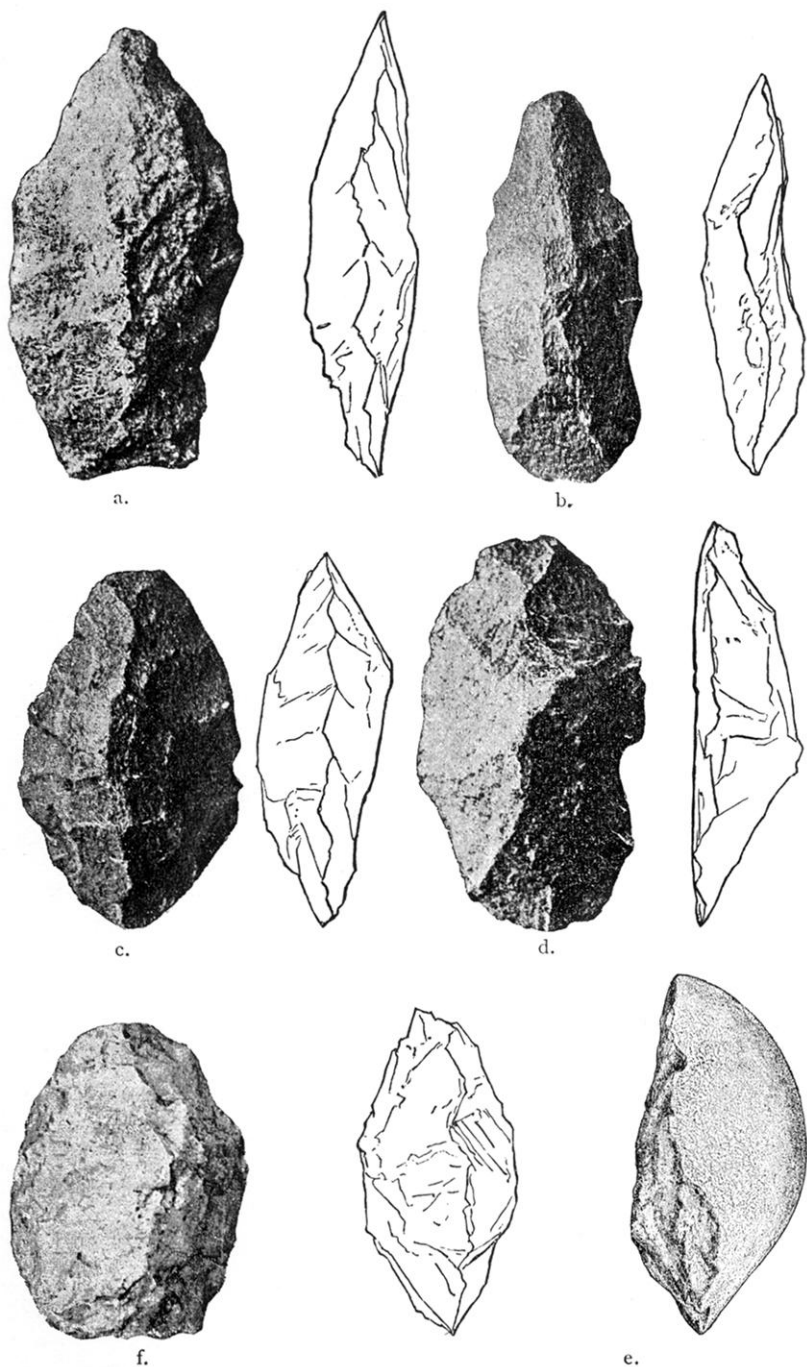
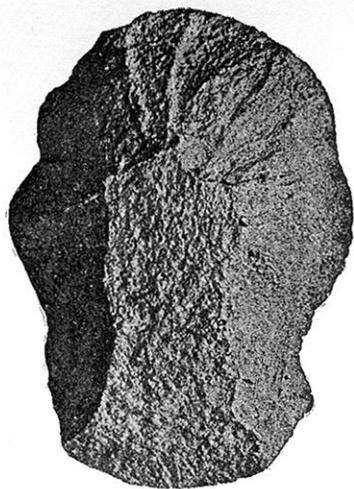
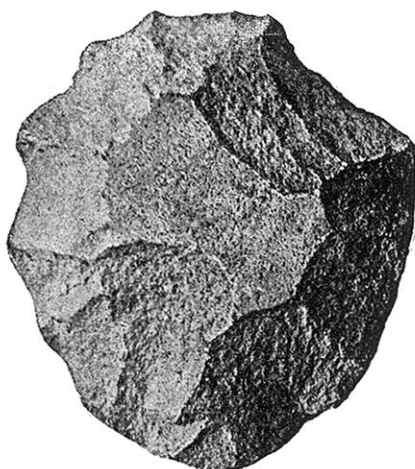


PLATE I.—Paleolithic implements from the District of Columbia.



a



b



c

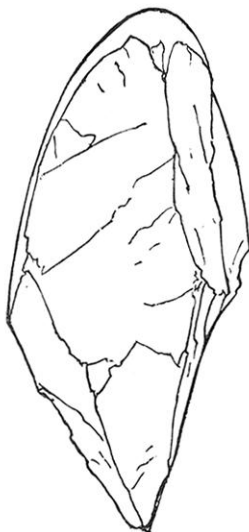


PLATE II.—Paleolithic implements from the District of Columbia.

The paleolithic implements found in the District of Columbia compare favorably with those collected by Dr. Abbott at Trenton, and they are equally if not more like the Chelleen implements found in Europe and Asia.

The greater portion of paleolithic implements from Europe are of flint. Flint is scarce in the United States and we have but few flint implements in any prehistoric epoch. We have, however, some of these flint paleoliths from Texas and more from Utah and New Mexico, and I invite a comparison of them with the Chelleen implements of flint from Western Europe.

The paleolithic implements of the United States were mostly made of quartzite. I invite a comparison of specimens of the same material from the Bois-du-Rocher, from Toulouse, from the Caverns of Creswell Crags, Derbyshire, England, and those from the laterite near Madras, in India.

Dissimilarity of Paleolithic and Neolithic Implements.—The culture of the neolithic period spread over the world, and the implements are well defined and known to all archæologists. The American Indian belonged to this period of culture, and the majority of his implements are similar to those in other parts of the world. Their dissimilarity from the paleolithic implements now under consideration is evident on first inspection and becomes more apparent the closer the scrutiny.

They differ in form, in thickness; are differently manufactured; are made of different material, and have a different appearance. The cutting end of the implement is reversed, being at the broad end.

The distinct type of implement called paleolithic is not known to have been used by the American Indian. The paleoliths are not Indian axes, nor hatchets, nor scrapers, nor knives, nor spear or arrow heads. Of the thousands of Indian mounds, cemeteries, graves, or monuments of whatever kind which have been explored, not one has ever yielded these paleolithic implements. In circular No. 36 from my office I propounded the question whether paleolithic implements were found in mounds, tombs, or other ancient structures, or associated with other ancient implements. In the hundreds of responses received from every part of the United States there is no affirmative answer. They may have been found associated with other implements on the surface, but in Indian mounds or graves, never.

Similarity of Fabrication.—Whether the particular piece chosen by the prehistoric workman for the manufacture of these implements was a rounded and smoothed pebble or a rough block, his mode of procedure appears to have been the same. He struck off the flakes by blows, probably with a hammer stone. The fracture left a conchoid of percussion, locating the point of blow with certainty (as shown in the middle portion of *c*, Plate II.). In many of the larger and ruder implements it would appear as if the work was begun and the heavier flakes knocked off by the aid of a punch, probably a stone point, of which the marks are at times visible and by means of which the stroke could be confined to a single spot. In many cases the smaller flakes have been struck from one side and then from the other until the implement was brought to an edge. Not infrequently the edge shows evidences of use, sometimes being battered rough and at other times being worn smooth. None of them are polished, as were the implements of the neolithic period.

Material.—Paleolithic man, whether of Europe or of New Jersey, employed for his implements material which possessed certain qualifications. It was necessary that it should be hard that it might not break or crumble; tough, that it might hold an edge; homogeneous (at least approximately), that it might be flaked in any direction; and it was usually of such substance as to break with a conchoidal fracture.

The materials of the implements found in the District of Columbia and throughout the United States possess in a surprising manner the above requirements. They are usually quartz, quartzite, and argillite, and for the most part were pebbles, frequently water-worn.

On the other hand, the North American Indian and his prehistoric ancestors of the neolithic period used all sorts of eruptive rocks for his implements. He made many also out of clay, rocks, slate, shale, and the like, any material serving him which would grind to a smooth surface and make a clean edge, whether capable of being chipped or not. He also used largely the peculiar material chert, which closely approaches the European flint, and, like that rock, may be shaped by a distinctive mode of chipping quite different from that exhibited by the paleoliths.

The line of demarcation can be plainly drawn between the two classes of implements.

Use and Purpose.—It is my opinion that the paleolithic implements of the United States correspond in use and purpose, as they

do in their other qualities, with the Chelleen implements of France. I think that the Chelleen implement was intended to be held in the hand and used as a knife, axe, or other cutting implement, either as a tool or weapon. It was the only implement the man of that epoch possessed.

I surmise their purpose and use by surmising the needs of the man who used them. These comparisons might be continued indefinitely, and the more thorough the comparison the greater will appear their similarity to other paleolithic implements and their dissimilarity to neolithic implements.

When I compare implements found by the thousand on the hills and in the valleys around the city of Washington with those, also found by the thousand, distributed over the United States from the Atlantic to the Pacific, and find them to be substantially the same implement; when I compare those from America with the equally great number from Europe and the Eastern Hemisphere, and find them all substantially the same implement; and when again, comparing them with the implements of the neolithic period, whether European or American, I find them to be unlike except in a few and insignificant details—when I review all these facts I am forced to the conclusion that the implements I exhibit from the District of Columbia are of the same paleolithic type as those found in the gravels at Trenton and elsewhere, and that they tend to prove the existence of a paleolithic period in the United States.

ANCIENT VILLAGE SITES AND ABORIGINAL WORKSHOPS IN THE DISTRICT OF COLUMBIA.

BY S. V. PROUDFIT.

The term "village site," as employed in these notes, is not to be understood as signifying a place formerly occupied by a compact group of dwellings, but rather one where their proximity to each other was interrupted by considerable spaces devoted to agricultural and other purposes. Such a community is described by Smith in his exploration of this valley.

"Their houses are in the midst of their fields or gardens, which are small plots of ground, some 20 (acres), some 40, some 100, some more, some lesse: sometimes from 2 to 100 of these houses together, or but little separated by groves of trees. Neare their habitations is

but little small wood or old trees on the ground, by reason of their burning of them for fire."

A community of this character occupied the eastern bank of the Anacostia, from Giesboro' Point on the south to within a short distance of Bladensburg on the north; not a continuous line of houses, but a succession of them at short intervals and at points convenient to the river.

The Anacostia has at this place, on its eastern shore, low-lying banks that stretch out into a comparatively level plain. The western shore line is for the greater part swampy in character, and offers but little inducement to a permanent occupation by either fishermen or farmers, and the ancient people of Nacotchtanke were both, as well as hunters and warriors. Quoting again from Smith: "And, lastly, Nacotchtanke, with 80 able men. The river, 10 miles above this place, maketh his passage down a low, pleasant valley, overshadowed in many places with high, rocky mountains, from whence distil innumerable sweet and pleasant springs."

The principal part of Nacotchtanke seems to have been about due east of the Capitol, for the fields at this point give greater evidence of occupation than at most others, though indications of Indian occupation are to be found at nearly all points of the valley. It should be noted that the dwellings were in most cases close to the bank of the stream. A line drawn parallel with the shore and three hundred feet distant would include the greater part of the houses. Within the area thus indicated may be found to-day every variety of stone implement common to the North American Indian. Arrow-heads, spear-heads, knives, drills, perforators, scrapers, sinkers, polished axes (both grooved and ungrooved), sharpening-stones, pipes, slate tablets, pestles, mortars, cup-stones, hammer-stones, as well as that rude axe-shaped implement of chipped quartzite which has yet to receive a name. (See *b*, Plate III.) Associated with these, and forming no inconsiderable part of the remains, are found partly worked implements—some broken, others worked into the first rude forms of the arrow-head or knife and then abandoned (see *a* and *d*, Plate III, and *d*, *e*, and *f*, Plate IV) and abounding everywhere flakes, chips, and pebbles of quartz and quartzite having but a chip or two struck from the original surface.

These fields have been under cultivation for many years, and are regularly visited by local collectors, yet they are to-day, in places, fairly strewn with the wreck of the old village life.



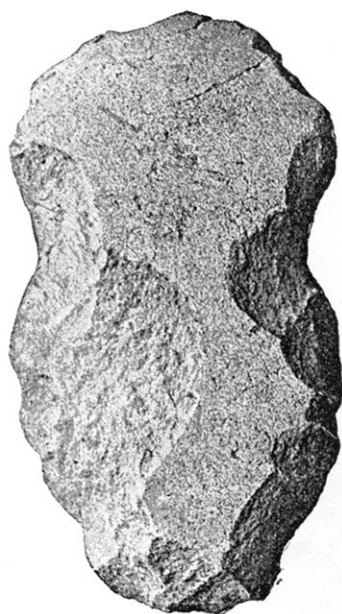
a



c



d



b



PLATE III.—Rude chipped implements from the District of Columbia.

In the manufacture of cutting and piercing implements the materials used were quartz, quartzite, argillite, and a ferruginous sandstone, with occasionally a piece of jasper or chert. The quartz and quartzite, the materials most frequently employed, were to be had in abundance from the never-failing gravel-beds of the Potomac valley, and that this source of supply was utilized is amply established by the many half-finished implements showing the surface of the pebble yet untouched. The argillite I have not satisfactorily located nearer than the coal-fields of the Upper Potomac. A description of the various implements in detail must be reserved for a future occasion.

One implement, however, I deem worthy of special mention—a long, thin blade of quartzite, pointed at each end and sharpened on the edges. This type, frequent at Nacotchtanke, is very rarely found on the other village sites of the District. Professor Mason has aptly named it the “shad knife,” and its form seems to warrant the use implied by the appellation.

In addition to the stone relics which this field affords, it should be observed that an abundance of pottery, in fragments, is to be found—one of the unfailing evidences of permanent aboriginal occupation.

On the map used in connection with this paper it will be observed that several other village sites are marked. The most important of these is the one stretching along the eastern shore of the Potomac from the lower reservoir to the Little Falls. This site lies on a table-land overlooking the river and at the base of another line of hills which rises from the eastern side of the plateau. The extent of this village is nearly equal to that of Nacotchtanke (Bennings), and it affords the same abundance of relics, which do not differ materially in character from those found at the latter place.

The other village sites located within the old District lines and designated on the map (see Plate V) are (1) “Red Bank,” on the west bank of the Anacostia and southeast of the Reform School; (2) the Carroll place in Washington, north of Garfield Park and between First and Second streets S. E.; (3) crest of the hill on the Virginia side of the Potomac, at Chain Bridge; (4) opposite the foot of Analostan Island, on the Virginia shore; (5) near the mouth of Four-Mile Run, Virginia; (6) on the farm of Isaac Crossmun, at Falls Church, Virginia; (7) “Namaraughquena,” at the south end of Long Bridge.

AN ABORIGINAL WORKSHOP.—Piney Branch is a small stream that makes its way through the hills that lie north of the city. From the point where it is crossed by the Fourteenth-street road to its union with Rock creek, it passes through a deep ravine, rocky in some places and in others made up of steep, gravelly hills that descend with considerable abruptness to the bed of the stream. The sides of the ravine and hill-tops are covered by a natural growth of forest trees. On the north side of the stream, and just below the Fourteenth-street bridge, may be seen the remains of an ancient workshop which deserves more than passing attention, as here occur the relics which are classed as paleolithic by some archæologists and which, in their opinion, furnish conclusive proof of the existence of paleolithic man within the District.

From the bed of the creek to the brow of the hill, and for some distance back, the ground is littered, and in many places covered to the depth of several inches, with chipped stones, chips, and flakes. Many of the stones show but slight marks of chipping, a few pieces having been struck off without materially modifying the original form. Others, however, and they may be numbered by the thousand, have been worked into definite form. The material used was the quartzite pebble, which composes to a large extent the gravel beds of the hill. The forms vary from that of the split pebble, with the outer face worked at the edges, leaving the center with its original surface untouched (see *c*, Plate III, and *a*, Plate IV), to that of the almond shape, chipped on both sides (see *b*, Plate IV). While these ruder forms constitute for the greater part the mass of the remains, thin knife-shaped implements of the same material are also found (see *c*, Plate IV). Most of these are broken, but perfect specimens occur frequently. While an occasional arrow-head has been found, not a scrap of pottery or other indication of residence marks the place.

On the level ground at the top of the hill the earth in places is covered with small chips and flakes, and mingled with them the butts and tips of broken knives. The comparative absence of rough material, large chips, and rude forms, noted on the hillside below, and the presence of small chips and finished forms, is at once apparent, and is not without suggestion as to the relative character of the work prosecuted in each place.

The area covered by this workshop, embracing several acres in extent, is not confined to the north side of the branch, but includes

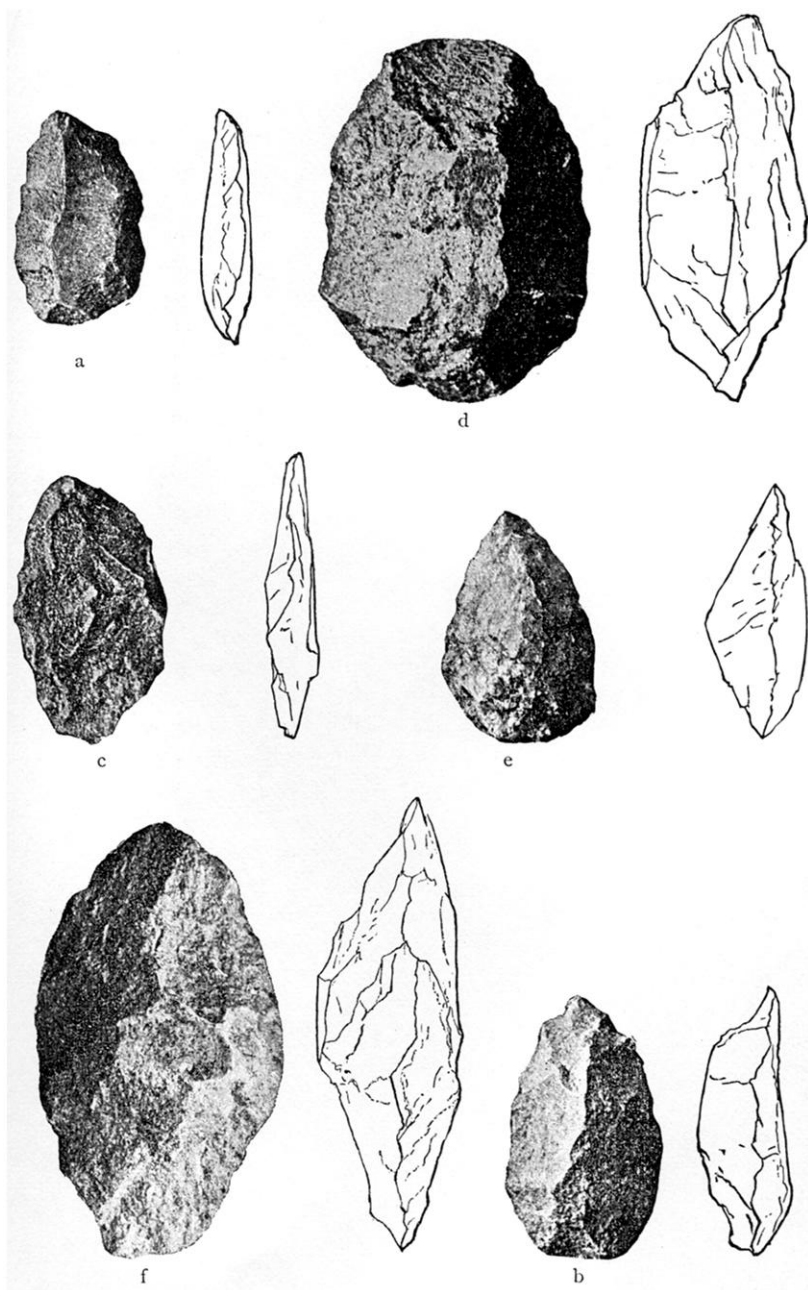


PLATE IV.—Rude chipped implements from the District of Columbia.

both sides, as well as the very bed of the stream. The greater part of the work, however, was done on the north side, and any attempt to state its amount would hardly be received with credence by one who has not visited the place and made it a study.

Similar workshops, though less in extent, are found in several places on Rock creek below Piney Branch. In some instances these places cover but a few square yards; in others the work is scattered over the hillsides in profusion.

My own conclusion as to the relics found at these points is that they are the resultant debris of Indian workshops, where material was roughly blocked out, to be afterward fashioned into knives, spearheads, &c.; and that no good reason is yet apparent for attributing their origin to paleolithic man.

SOAPSTONE QUARRIES.—Among the remains found on the village sites fragments of soapstone vessels and other forms of the same material frequently occur, and in sufficient quantity to establish the fact that the value of soapstone for vessels and other articles of domestic use had received substantial recognition. The material is found in many places in the Potomac valley, and several aboriginal quarries have been located within the limits of the District. The most notable of these is the Rose Hill quarry, about three miles north of the city and near Tenleytown, a full account of which was furnished by Dr. Reynolds in the 13th Annual Report of the Peabody Museum. An examination of the place shows extensive workings, prosecuted intelligently and with considerable success. Pits and trenches, now filled with trees and underbrush, mark the hillside on every hand, and rough fragments of broken and unfinished vessels are scattered about, half buried in the forest soil that has accumulated since the abandonment of the quarry. The comparative absence of fragments would seem to indicate that the process of manufacture at this place was not carried farther than to reduce the original block to a vessel convenient in size and weight for transportation.

At a point one mile below Falls Church, Virginia, on the old Febrey estate, I found a small but interesting soapstone workshop. It is located on a hillside overlooking Four-Mile Run and about one-fourth of a mile below a recently worked soapstone quarry. Large pieces of the unworked stone and fragments of unfinished vessels covered the ground, which occupies an area of not more than half an acre in extent. No perfect vessels were found, and the best speci-

men obtained was a small core worked out from the interior of a vessel in the process of its construction. Several quartz implements suited for working the stone were found mingled with the debris. The amount of material on the ground was comparatively small, when compared with that at the Rose Hill quarry, and probably it had been carried from the quarry above, where the recent operations have obliterated all traces of ancient mining, if any existed. Careful and repeated search in the neighborhood of this quarry only resulted in the discovery of a few pieces of unfinished vessels—enough, perhaps, to justify the conclusion that this quarry furnished the material used at the workshop.

SUMMARY.—Taking the evidence of the fields of to-day, we are enabled to supplement, in some degree, the brief historic account of the early people of the Potomac. Where recorded observation has fallen short the archæologist may thus take up the study of this primitive period in the less imperishable, though unwritten, record left by this vanished people.

Having identified a camp site by means of historical evidence, it is easy, by a study of its character, to determine the location of others of equal importance, though not mentioned by the historian, especially where the remains are so abundant and distinctive in character as they are in this region. By adding the deductions to be drawn from a comparative study of the archæologic material to the historic facts we may determine the status and rank of this people among the aboriginal tribes of North America.

POTTERY OF THE POTOMAC TIDE-WATER REGION.

BY W. H. HOLMES.

Introductory.—The manufacture of earthenware was one of the few simple arts practiced by the primitive inhabitants of the Potomac tide-water region. Clay was employed chiefly in the construction of vessels for domestic purposes, and fragments of the fragile utensils were left upon camp sites or built into the gradually accumulating masses of kitchen refuse. These sherds constitute the chief record upon which we rely for our knowledge of the art.

Meagre references to the use of earthen vessels by the natives are found in the writings of the first colonists, and it is known that

feeble remnants of the Virginia Indians have continued to practice the art even down to our own time.

It is difficult to say whether or not pottery was universally employed by the tribes who dwelt upon or who from time to time visited our shores, for its durability varies greatly, and the village sites that now furnish us no specimens whatever may in former times have been well supplied.

It may further be noted that the duration of the practice of the art cannot be definitely determined; for, although fragments may be found from base to summit of shell heaps and mounds that must have been hundreds of years building or accumulating, we cannot as yet say that a long paleolithic epoch of occupation did not pass entirely without pottery.

Whole vessels are rarely found, and such as we have are recovered from graves where they were deposited with especial care and at considerable depth. From camp or village sites and from all artificial deposits and accumulations where they are mere refuse they are recovered in a fragmentary state and in pieces so small and so entirely disassociated that full restorations are exceedingly difficult.

There is enough, however, to give a pretty clear idea of the scope of the art and of the character of its products—enough, it may be added, to enable us to form a definite notion of the culture status of the pre-Columbian peoples as well as to throw considerable light upon their ethnic affinities.

Authors.—Little has been written upon this branch of our local archæology. Titian Peale and Louis A. Kengla have given it a passing notice. Hariot, historian of the Roanoke expedition of 1587, gives a brief but lucid description of the use of earthen vessels by the natives, illustrating the subject by a copper-plate engraving made by De Bry from the original drawing of John White, an artist and a prominent member of the Roanoke colony.

Hariot says that “their woemen know how to make earthen vessels with special cunnige and that so large and fine, that our potters with thoye wheles can make noe better: ant then remove them from place to place as easelye as we can doe our brassen kettles. After they have set them uppon an heape of erthe to stay them from fallinge, they putt wood which being kyndled one of them taketh great care that the fyre burne equally rounde about. They or their woemen fill the vessel with water, and then putt they in fruite, flesh, and fish, and lett all boyle together like a galliemanfrye, which the Spaniards

call, olla podrida. Then they putt yt out into disches, and sett before the Companye, and then they make goode cheer together."

Collections.—The collections of vessels and sherds that I have been permitted to study cannot boast of any great degree of completeness, and fall far short of what systematic research will in the near future put within our reach. The National Museum has a series of fragments collected by O. N. Bryan, E. R. Reynolds, J. D. McGuire, and others, and I have been granted the privilege of examining the private collections of Dr. E. R. Reynolds, Mr. S. V. Proudfit, and Mr. W. H. Phillips. A valuable addition to the collections from the upper Potomac was recently made by Mr. W. K. Morehead, who has kindly placed the few pieces of earthenware at my disposal.

Localities.—The localities represented are quite numerous and very generally distributed along the shores of rivers and bays.

Material.—The clay employed is of varying degrees of purity and is tempered with divers ingredients. These ingredients have varied with tribes and with localities; they comprise all grades and varieties of sand and artificially pulverized rock, such as quartz, schist, steatite, etc. Pounded shell was extensively employed, but the fragments of this substance have in many cases decayed and dropped out, and are represented by the irregular pits which now characterize many of the sherds.

The percentage of these ingredients is often surprisingly great, as they constitute one-half or even, in cases, three-fourths of the mass.

Upon what theory these tempering substances were added to the clay we are unable positively to determine. We conjecture that strength, porosity, resistance to heat, etc., were qualities especially sought, but we cannot say that superstition did not have something to do with it. The potter may have believed that the clay at hand, unmixed with ingredients from particular localities or of certain kinds, would subject the utensils made from it to the influence of malignant spirits, or from a vision or dream he may have learned that a vessel not containing a proper amount of shell material would never be well filled with chowder or with terrapin.

Manipulation.—Of the preparation of the clay we can say nothing, save through our knowledge of modern practices, but the relics give us many clues as to the methods of building and finishing the ware. Systematic coiling was not practiced, but the walls were in

cases built up by means of more or less narrow bands of clay, which were pressed together and smoothed down by the fingers or a suitable tool. In many cases the vases break along the junction lines of the original bands.

To what extent molds such as baskets, gourds, and the like were used we cannot clearly determine, but that they were used is pretty certain. Exterior impressions of basket-like textures are not uncommon. The surfaces were, to a limited extent, shaped and finished by the use of improvised paddles.

Form.—The shapes of this pottery do not show a very wide range of variation, for the stamp of the preceramic originals are still upon them, and the differentiation of use and office had not yet gone so far in modification and multiplication of forms as it had with the wares of the more advanced races of the west and south. The pot, with all that the name implies, was still the leading idea, and now furnishes the type of form. Its outline varies from a deep bowl, through many degrees of rim and neck constriction and expansion, to a rather wide-mouthed, sub-bottle shape. There is, however, no end of variation in detail within this narrow range of general conformation. Rims are scalloped, thickened, incurved, recurved, and otherwise modified. Necks are straight and upright, swelled out or gently or sharply constricted. Bodies are globular or oblong, and are rounded or pointed below. Illustrations of typical forms are given in *a*, *b*, *c*, and *d*, Plate VI. Handles, legs, knobs, and projecting ornaments are rarely met with.

A few pipes and some round, perforated pellets—perhaps beads—are the only additional forms that I have seen.

Size.—The size is generally medium, the capacity being a gallon, more or less; but minute forms, as well as very large ones, are not uncommon.

Use.—Use was chiefly domestic and generally culinary, as the sooty surfaces and blackened paste clearly indicate; but the vessels were not infrequently diverted to sacred and ceremonial uses, as we know from historic evidence. It is instructive to note, however, that such special functions had apparently not yet, as in the west and south, given rise to especial forms.

Surface Finish.—Surface finish was necessarily not of a very refined kind. The fingers or a polishing tool sparingly used gave all neces-

sary evenness of surface. In many cases fabric impressions, acquired in construction or afterwards applied for effect, cover the entire exterior surface. Often these markings were afterwards smoothed down and nearly or quite obliterated, indicating that they had no important æsthetic office. Other similar impressions from fabrics or fabric-covered paddles were afterwards applied, very certainly on account of some æsthetic or superstitious office.

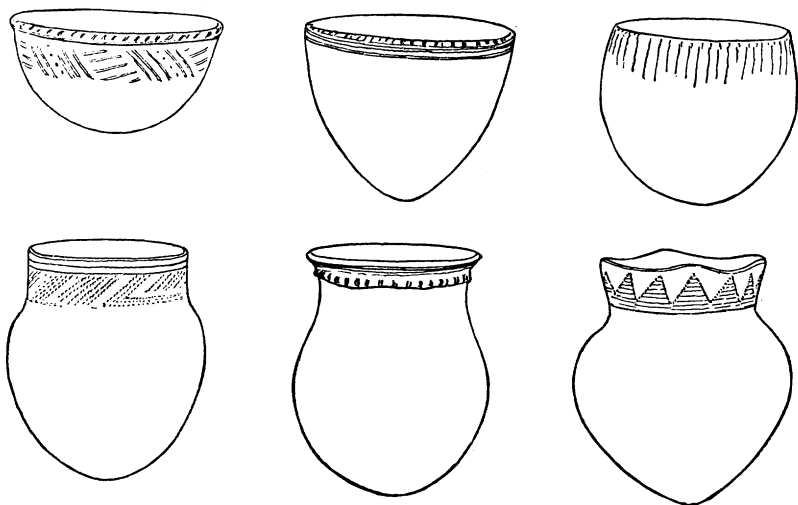
Ornament.—Much of this ware is decorated in simple but effective ways. We cannot draw a very definite line between those features that exist through accidents of manufacture and those having æsthetic or mixed æsthetic and ideographic office ; but it is sufficient for our purpose to classify all patterns that show evidence of design as ornament. The decorations are confined to the neck and rim of the vessel. They were impressed by means of numerous improvised stamps or were executed with the fingers or a pointed implement. The most usual method was by the employment of bits of hard-twisted or neatly-wrapped cords or thongs. If a series of short indentations was desired the cord was doubled between the thumb and finger or laid across the end of the finger and pressed sharply into the clay. Longer lines were made by laying the cord singly upon the clay and running the finger along it for the length of the desired impression. This was repeated until the pattern was finished.

As a rule, the figures were undoubtedly suggested by textile combinations, and in many cases served simply to emphasize or carry out more fully the markings received from the basket or net-mold employed in construction. Similar effects were secured by incising, trailing, or puncturing with a pointed tool.

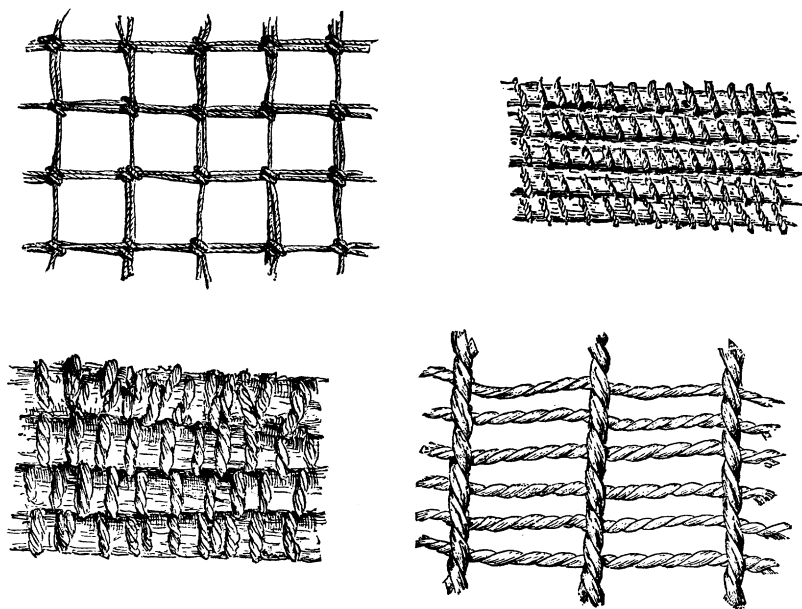
It is interesting to note that the tattoo marks upon the “foreheads, cheeks, chynne, armes, and leggs” of the “chief ladyes” of the Chesapeake, as shown in John White’s illustrations of the Roanoke expedition, are identical with the figures upon the pottery now exhumed from our shell-heaps.

Fabrics.—It happens that a study of the textile art of the Chesapeake tribes becomes a natural appendix to that of the fictile art.

Historic Fabrics.—From historic sources we know that the Virginia Indians produced a variety of textile articles, wattled structures for shelter and for trapping fish, mats for coverings, hangings, and carpetings, nets for fishing, besides baskets, nets, and pouches for various ordinary uses.



Types of form, pottery of the Potomac Valley.



Examples of fabrics impressed upon pottery of the Potomac Valley.

Fabrics from Pottery.—From impressions upon pottery we get additional evidence upon the subject—much more indeed upon the technique of the art than can ever be known from any other source. Casts in clay from the potsherds give us numerous restorations of the construction of such cloths, nets, and baskets as happened to be associated with the potter's art. Four examples are presented in Plate VI.

That all are aboriginal in origin cannot be proved, but there is nothing in them that seems out of harmony with the known art-status of the Indian tribes. The presence of nets identical with the fish nets of the European affords the only reason for making the query.

Indications of Æsthetic Status.—The condition of the æsthetic idea among our predecessors must receive a moment's attention.

Form.—The *shapes* of the earthen vessels are in a great measure inherited from basketry, but they are conditioned to a considerable degree by characters imposed by material, construction, use, and the rather weak promptings of the æsthetic idea. As a rule they are not crude, but rather shapely and graceful.

Decoration.—In decoration textile ideas inherited from basketry still held almost undisputed sway, and the timorous essays of taste did not extend beyond the shadow of the mother art.

The impressions of nets, baskets, and other textiles employed in manipulating the clay are in many cases ornamental in effect and were probably so regarded by the archaic potter.

We are reasonably safe in assuming that the elaboration of textile suggestions by means of stamps and pointed tools was the result to a certain extent of æsthetic promptings; but there is another element to be considered—that of the inheritance of forms and ideas from antecedent stages of art and of the conservatism of habit and superstition that tends so decidedly to retain and perpetuate them even when meaningless.

The *amount* of decorative elaboration is, therefore, not a *correct* measure of the condition of æsthetic development, although it is a measure of the condition of that body of features in the art that become the exclusive possession of the æsthetic idea after habit and superstition loosen their hold.

Ethnic Significance.—I have myself gathered potsherds of the above class all along the coast from the Chowan river, in Carolina, to the

eastern shore of Nantucket, and have seen specimens from all parts of the Atlantic coastal belt. Among them all there is no hint of other ethnic conditions than those known through historic channels. All indicate an even plane of barbaric simplicity. There is fair homogeneity of character as well as correspondence in stage, indicating ethnic unity.

Every relic of art has an ethnic value, and even these stray fragments of earthenware, when all the evidence attainable has been gathered about them, may be found useful in the determination of ethnic questions.

In glancing at the linguistic map of the United States prepared by Major Powell and his assistants I find a general correspondence between the distribution of this family of earthenware and the area assigned to the Algonkian peoples.

THE SHELL MOUNDS OF THE POTOMAC AND WICOMICO.

BY ELMER R. REYNOLDS.

The deposits to which attention is invited are principally found on the left or Maryland shore of the Potomac, in the counties of Charles and St. Mary's. The map at the end of this article sufficiently indicates their distribution.

It is proper to state that I have found it convenient to classify these deposits as Mounds and Shell-fields. The deposit is called a mound when it reaches a height of five feet or more. The deposit is considered a shell-field when the height is less than five feet and the remains extend over a large area.

In going down the river the first shell-heaps which have been observed are at Nanjemoy, in upper Charles county. The numerous deposits and relics of camp life here are worthy of special mention only because they are tokens of ancient oyster fishing in a region where shell-fish no longer exist. The cause which led to the decadence of the fishery at this northern limit may be ascribed to the filling up of the stream, the silt from the cultivated fields covering and destroying the once prolific beds.

Similar small deposits are found a few miles below, along the shores of Port Tobacco river.

The first deposit on the western or Virginia shore is above Mathias Point, in King George county. This is a shell-field too deep for

cultivation, its depth varying from one to three feet. It follows the shore for several hundred yards, its diameter ranging from one hundred and fifty to two hundred feet. The shells are much decomposed and are employed somewhat as a fertilizer. They have been identified as the *Ostrea virginica*.

In a small fishing camp north of the deposit were found numerous chipped axes, arrows, spear-points, and sherds of pottery.

The largest and what may be regarded as the typical mounds of the Potomac are situated near Newburgh, Md. The larger of these deposits is found on the southern extremity of a high peninsula which slopes steeply down between Pope's creek and the river. The surface embraced by this extraordinary deposit is at present something less than seven acres, although in early colonial times it was nearly double that extent. The greatest depth is near the southwestern angle of the mound and is seven and a half feet. Formerly, however, the deposit must have been from twenty to twenty-five feet high.

A lime-kiln has been erected near the deepest portion of the mound, and from this point a section has been opened up across its entire lower border.

The upper margin of the deposit terminates in a thin shell-field covering hundreds of acres along the Potomac in the direction of Port Tobacco. The mound was formerly concealed by a thick stratum of earth, which withstood the plowing and cultivation of nearly two hundred years. This soil was washed down from the sloping hill already referred to.

The exposed section near the kiln affords an excellent opportunity to study the gradual growth and characteristics of the structure. Stratification cannot be said to exist at any point, although certain dusky lines seemingly indicate that the accumulation may have been interrupted at various intervals from causes not now determinable. The antiquity and enormous pressure to which the bottom of the mound has been subjected are clearly shown by the condition of the shells, which are more decomposed than those on the summit.

The shells are similar to those already noted. The remains of mammals, birds, fishes, terrapins, hard clam (*quauhaug*; *Venus mercenaria*) are also found. The hard clam is now no longer found in this immediate region.

Fire-places, marked by ashes, coal, bones, pottery, etc., were uncovered at several points.

Rude axes, celts, arrows, spears, knives, pottery, broken pipes, hammer-stones, net-sinkers, pestles, and scrapers are the art products brought to light by the industrious lime-burners, who were requested to note all objects discovered.

The hammers are found by thousands, but not more than one in ten shows evidence of former use.

The examples of pottery found at various depths were very rude indeed, but no coarser than specimens usually found in other fishing camps.

A careful examination of the shells found in this and other mounds discloses that two methods were employed in extracting the oysters. The first was by steaming them in an open fire until the valves opened sufficiently to admit a celt of bone, wood, or stone, by which the shells were wrenched apart and the oyster removed. That this method was adopted, or that they were steamed in covered pits, is shown by the unbroken shells, from which the oysters could not have been removed in any other manner.

The second method was by chipping away the anterior portion of the valves until an opening had been made for a celt.

No pits were found in this region, although they have been discovered on the eastern shore of the Chesapeake Bay, and also fire-heated stones by which the steam was generated.

The manner in which the Indians fished the oysters must be left to inference. In most places the river shoals gently for nearly a half mile, and in such localities the oyster-beds approach the shore so closely that they may be taken without difficulty when the tide is out. As the beds vary from six to twelve inches in depth, it seems probable that they must have been detached in masses by means of a sharpened pole. That diving for oysters was also resorted to is shown by traditions still current on the Choptank river.

As to the age of the Newburgh mound, I can only say that it is presumably pre-Columbian. The original deposit must have required two or three centuries in its formation; and as the Indians left this region immediately after the cession of their territory, in 1633-1634, its size could not have been increased after that period.

The second mound is the higher of the two and the loftiest now found on the Potomac. It rests on a sloping hillside south of the creek, near its mouth. It is also covered with earth, which nourishes a growth of cedars and brush-wood. Its greatest dimensions, so far as I was able to determine, are as follows: Length, unknown, as it

is still concealed by earth and vegetation ; width, less than a hundred feet ; height, so far as exposed, between eleven and twelve feet. The contents are similar to those found in the large companion mound. The shells are much cleaner and firmer, owing to their protected condition. This deposit also has been purchased by the railroad company, and the shells are being removed for ballast.

The section is on the western side. When first opened the workmen found a large earthen pot near the summit. It contained nearly a quart of arrow-heads and some other objects whose nature I was unable to learn.

This deposit yields rude axes, pottery, and hammer-stones ; but no bones were observed during my repeated visits.

The following shell fields and mounds will be named in the order of their occurrence, but not described at length :

A large shell-field fronting the ruins of Blenheim Manor, four miles south of Newburgh.

A similar deposit at Ludlow's Ferry, one mile below Blenheim. The depth of these fields will scarcely exceed an average of twelve inches.

A large shell-field at Lower Cedar Point, a mile in extent ; depth, from one to four feet. The next field is one mile below Cedar Point, on the "Waverly" plantation, owned by Mrs. Hungerford. The deposit is one mile in length, one-half being on the Potomac and the remainder following the northern shore of Piccowaxton creek. It is from one to two hundred feet wide and its depth from one to four feet.

Immediately south of Piccowaxton creek is the largest shell-field on the Potomac. Its length is nearly two miles. It covers the entire front of the ancient manor called the "Banks of the Dee," owned by Mona Lloyd, Esq. The southern portion deflects to the left and follows Cuckold's creek for half a mile. The width is from one to three hundred feet. The depth varies from one to four feet, the deepest portion being at the southern angle.

An extensive fishing camp skirts the whole inner margin of this field. This yields polished and chipped axes, celts, pestles, pipes, ceremonial weapons, and a large list of other relics.

Fronting the southern angle of the "Dee" is a shell mound situated on a reef in the Potomac about a furlong from the shore. The time selected for its examination was at low tide, when the greatest surface was exposed. I found it to be seventy-five feet long by thirty-

five in diameter, its height being about seven feet. It was about fifteen feet high early in the century, when the space between it and the shore was a reedy morass. A close examination was made, but no trace of human workmanship could be found among the shells, which were smoothly polished by the long-continued action of the water. That this deposit was reared by Indian hands there is no reasonable room to doubt, although none but circumstantial proof remains.

Situated in the mouth of Cuckold's creek is a shell-field on Simms' island. The entire area contains about two acres, one-half of which is covered with shells to a depth of one or two feet. The objects of human workmanship found here consist of hammers and pottery.

The next deposit is located on the southern shore of Cuckold's creek, on an estate called "Bachelor's Hope." The field follows the creek inland for nearly a mile, the width being from one to two hundred yards and the greatest depth nearly two feet.

The camp on the inner margin of this shell-field yielded polished celts, hammers, and fragments of pottery.

Swan Point is five miles north of the Wicomico river. It contains a thin shell-field which covers from one to three acres. The products were chipped axes, spears, arrows, hammers, and pottery.

A large mound and a very extensive shell-field are found at Lancaster on the Wicomico river two miles east of its junction with the Potomac. The mound was once about fifteen or eighteen feet high, but the demands of a lime-kiln in its vicinity have reduced its height to nine feet.

The shell-field is about three-fourths of a mile in length and yielded several interesting objects, among which was a finely wrought cup-stone and an axe of English flint, the material of which the Indian had obtained from a cargo of ballast brought over in early colonial times and abandoned in shoal water near the landing.

Other shell-fields are found above Lancaster, on the farms of Mrs. Ignatia Lancaster and Charles Lancaster, at Charlestown creek. Similar deposits are found also on the farm of Mrs. West Hatton, at Stoddard's wharf, and elsewhere at intervals as far up as Allen's Fresh, at which point the oysters cease to grow.

Shell-fields of various sizes are found also on the southern shore of the Wicomico, in St. Mary's county, the longest and most important being on the Plowden estate, called St. Clement's Manor. The entire river front of the manor is covered with a layer of shells vary-

ing from one to four feet in depth. Nothing but fragments of pottery containing shell tempering were found at this place, although it is probable that a rich camp exists in rear of the mnaor.

Smaller and less interesting shell-heaps are found at Chickahominy plantation and at other places nearer the mouth of the Wicomico.

My original opinion was that a dense population once lived in this region. I confess now that I have been compelled to modify my views in this respect. Furthermore, I am now of the belief that the importance of aboriginal oyster-fishing as an actual, *necessary* food resource has been quite overestimated. In brief, I believe that the oyster was more of a luxury than a necessity.

Cemeteries.—Burial places are difficult to find in this region, as all superficial signs have been obliterated by cultivation. A number of graves were discovered at Pope's creek subsequent to my first visit. Such crania as I could collect have been deposited in the Army Medical Museum. One skull is particularly interesting because its outer table exhibits traces of some deep-seated disease which has not yet been determined.

A second cemetery was discovered at "Indian Town," on the headwaters of the Wicomico river, but no entire crania were obtained.

About three years ago many human bones were exhumed from the great mound at Pope's creek by the lime-burners, but I was unable to learn what became of them. That the custom of burying in shell-mounds was not uncommon has been verified in distant localities on the eastern shore of the Bay, where, during my research, I learned that four bodies had been removed from the mound at Roadley Manor, two from the Bolingbroke shell-field, and one from the enormous deposit at Chancellor's Point.

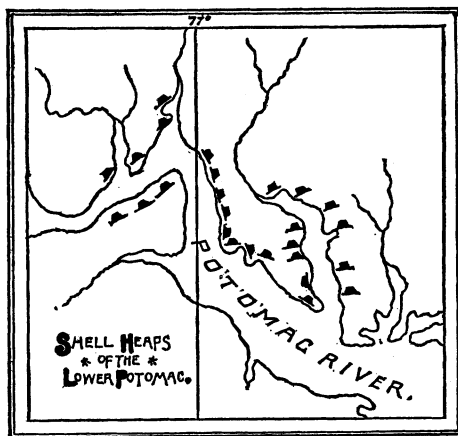
I have omitted to state that two places only have been discovered where the camps were situated on the mounds themselves. The first was at Newburgh and the second at Goose Point, on the Choptank river. Usually the camp was situated directly in rear of the shell-heaps.

Arts.—The art products are similar to those discovered in the fishing camps of the Upper Potomac. I will enumerate a few characteristic types: Very long, slender pestles, and others having a graceful central swell; bored ceremonial weapons; pierced tablets of variegated slate and porphyritic syenite; spheroids of quartzite ranging from four to six inches in diameter; pipes of stone and clay; polished

axes and celts ; beads of bone, stone, and glass, the latter belonging to the so-called Venetian polychrome type. They are ovoid, of various sizes, and are beautifully colored in red, white, and green patterns.

Who were the Indians who raised the shell-heaps ? They were the Wicomicoes. Of their history we know but little, and that little is in their favor. Father White, the earliest colonial missionary among these people, has given a few meager facts in his Latin *Relatio*. These I have abridged for this occasion. Their principal town occupied the present site of St. Mary's, near Cornfield Harbor. The Indians were tall and finely proportioned. Their faces were fair and pleasing when not covered with paint, which "was employed to keep the mosquitoes away." Their dress was of deer-skin. Their food was game, fish, and hominy. Their huts were made of bent poles covered with mats of woven grass and with the bark of trees. For weapons they used the bow, axe, and club. No mention is made of spears, although Father White attributes this weapon to the warlike Piscataways of the north.

The early and peaceful transfer of this territory to Europeans was due to the periodical forays of the Patuxent Indians, of the eastern border, "who came over to steal the Wicomicoe women."



Map showing distribution of shell heaps, etc., on lower Potomac.

A few descendants of the Wicomicoes still live in Charles and St. Mary's. Some claim to be full-blooded, but the majority have deteriorated by intermarriage with negro slaves. At Port Tobacco, in 1883, a so-called full-blooded Wicomico died at the advanced age of 109 years. The Indian also whom I employed to guide me to the ancient town on the Wicomico was said to be of pure native blood. His name was Swan. He was rather short, with black eyes and hair. His jaw and cheek bones were very pronounced and his skin quite swarthy. He was unable to give any account of himself beyond the fact that he was an Indian.

INDIAN TRIBES OF THE DISTRICT OF COLUMBIA.

BY JAMES MOONEY.

On a June day, in 1608, Captain John Smith left Jamestown in an open boat, with fourteen companions, to explore the waters of the Chesapeake. Entering the Bay, they crossed to the eastern shore, "and here," says Smith, "the first people we saw were two grim and stout savages, upon Cape Charles, with long poles like javelings headed with bone. They boldly demanded what we were and what we would." Having satisfied these fierce warriors of their friendly intentions, the explorers continued some distance up the Bay, and then, returning along the west shore, ascended the Potomac. But the great chief, Powhatan, had ordered the little band of adventurers to be cut off, and in consequence they found themselves received with a show of hostility at several places as they proceeded up the river; "but at Moyaones, Nacotchtant, and Toags the people did their best to content us." Going yet a little farther, they found the navigation obstructed by immense rocks spangled with mica, which glistened like gold in the sunlight as the water trickled down their sides. Having now reached the vicinity of the Little Falls, about five miles above Washington, they turned and retraced their way to Jamestown.*

This is the first authentic notice of the subjects of this paper, the Indians of the District of Columbia, the term as here used being

* The cross marked on Smith's map would seem to indicate that he went some distance farther up, but his description agrees best with the vicinity of the Little Falls. Moreover, the river at Little Falls is impassable for a boat.

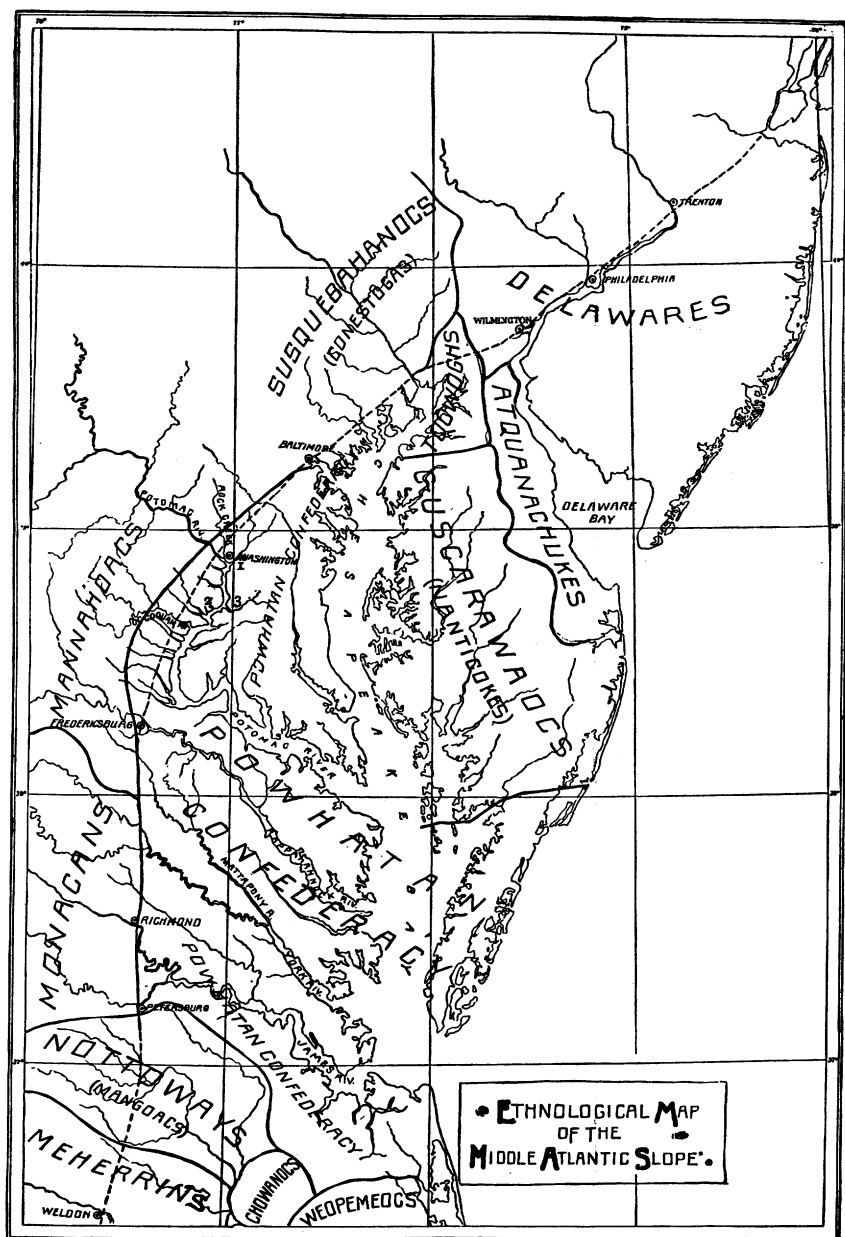
understood to include not merely the original area of ten miles square, but also the adjacent territory on both sides of the Potomac. Each of the three friendly settlements mentioned in the account was the headquarters of a distinct tribe of the same name. Toags, which appears on Smith's map as Tauxenent, was at or near Mount Vernon, seventeen miles below Washington, on the Virginia side of the Potomac river. Moyaones appears, from the same map, to have been directly opposite, on the Maryland side, just below the mouth of the Piscataway, while Nacotchtant, or Nacochtank, was on the same side, just below the Eastern Branch and within the present limits of the District.* On either side of Nacochtank was a smaller settlement, marked but not named on the map, the three forming a continuous line of fields and cabins along the east bank of the Eastern Branch from its entrance into the District to some distance below Giesboro point.

On the Virginia side, directly across the Long bridge, opposite Washington, was another small settlement, called Nameroughquena, and between it and Tauxenent (Mount Vernon) were two others, known respectively as Assaomeck (about Alexandria) and Namasingakent (below Alexandria). Several other small settlements are indicated on the map, on the Maryland side, about the mouth of the Piscataway, but none are marked on either side of the river above Washington, although archæologic researches tend to show the former existence of a considerable settlement about two miles above Georgetown and within the present limits of the District.

Nacochtank, which was the residence of a chief and contained eighty warriors, was the principal settlement within or adjoining the District. The Jesuits, who came out later with Lord Baltimore, latinized the name as Anacostan, whence we get Anacostia, the modern name of the Eastern Branch, at Washington, and of the post office at Uniontown, on its southeast bank, and perhaps also Analostan, the name of the island opposite Georgetown.

The natives were of the great Algonquian stock, and spoke the language of the Powhatan confederacy, which occupied tide water Virginia from the waters of Albemarle sound to the Potomac, and probably also the basin of the Patuxent, although the Maryland

* Bozman (History of Maryland, I, 119, 1837) thinks Toags was on the Maryland side, about Indian Point, or lower down, at Maryland Point, in Charles county, while he locates Moyaones about Broad creek, just above the Piscataway.



1. Nacochtank (Anacostia). 2. Tauxenent (Mt. Vernon). 3. Moyaones.

branch, at least after the death of Powhatan, appears to have had but slight connection with the main body. The tribes speaking this language extended inland up to the falls of the principal rivers along the great geologic boundary line marked out ages ago, as described by Mr. McGee. Below this line the broad estuaries were abundantly supplied with salt-water fish and bordered by flats of rich agricultural land. Above it the rivers rapidly dwindled to diminutive streams, in which only the smaller varieties of fish were found, while the soil was thin and poor and altogether unsuited for Indian agriculture. Thus the Powhatan tribes were farmers and fishers, dwelling in fixed habitations, while their enemies—the Monacans and Mannahoacs—living respectively on the headwaters of the James and Rappahannock, were a race of wandering hunters. To what stock these latter tribes belonged we know not. They died and made no sign, and a few local names are all that have been preserved to show that they once existed. There is a possibility that they were a part of the Siouan family now roaming over the prairies of the West.

We thus see tribal boundaries and mode of life, with the consequent tribal characteristics, determined by a remote geologic convulsion, and we may also reasonably expect to see such differences reflected in the archæologic finds. Such in fact is the case, for within the ancient limits of the Powhatans, who had their permanent settlements along the river banks, we find great numbers of neolithic implements in every stretch of bottom land, while in the hill country of the hunting tribes, who were without a local habitation, such remains are fewer and are scattered about in such a manner that it is impossible to guess beforehand where they may or may not be found.

On Albemarle sound, to the southeast of the Powhatans, were the Weapemeocs, another Algonquin tribe, differing but little from their northern kinsmen. Adjoining them on the west were the Chowanocs, Meherrins, and Mangoacs or Nottoways, southern offshoots from the powerful Iroquoian stock, whose chief seat was in central New York. On the northeast, between the Chesapeake and Delaware bays, were the Cuscarawaocs (about equivalent to the Nanticokes), Atquanachukes, and other tribes, of Algonquin lineage, and closely connected with the Delawares farther north. At the head of Chesapeake bay and extending along the lower Susquehanna were the powerful Susquesahanocs or Conestogas and their allies, the Tocwoghs, both akin to their northern neighbors, the Iroquois or Five Nations, with whom, however, they carried on a constant and desperate warfare. The lo-

cation of these tribes and of the settlements above referred to appears upon the accompanying map.

The Weapemeocs, Chowanocs, Mangoacs, Powhatans, Monacans, Mannahoacs, Susquesahanocs, Tocwoghs, Cuscarawaocs, and Atquanachukes each spoke a different language and could understand the others only through interpreters. With most of these we need not concern ourselves here, but the Susquesahanocs will be found to play an important part in the Indian history of this region. The Piscataways, afterward known as Conoys, are not mentioned under either of these names by Smith, and the name Piscataway appears to have been a collective term for several small tribes west of Patuxent, including, probably, the Moyaones, previously mentioned. The Patuxents, on the lower course of the river of that name, seem finally to have merged into the Piscataways.

The Powhatans placed their chief dependence upon agriculture, and Percy, in 1607, found on the Rappahannock "the goodliest corne fieldes that ever was seen in any countrey."* The woods also afforded abundance of wild fruits and nuts, while the marshes supplied wild rice and tuckaho, the tubers of the latter being used as bread. The tidal estuaries swarmed with fish, and the numerous shell-heaps along the lower Potomac bear witness to the abundance of oysters. Despite all this the natural improvidence of the savage kept him always but one remove from starvation, and, according to the old chronicler, his body altered with his diet in the different seasons, and he grew fat or lean, strong or weak, "even as the deere and wilde beasts."†

Fish were taken in nets made from vegetable fiber or in weirs made of the twisted stalks of reeds. They did much of their fishing in canoes, using bone hooks, or long arrows which were fastened to the end of a string and shot into the fish. The canoe was hollowed out from a poplar log, and was sometimes fifty feet long and capable of carrying forty men.

As soon as their corn was gathered in the fall they left their homes and, forming themselves into companies, went up to the hill country for their winter hunt. This brought them into collision with other tribes, and thus gave rise to constant wars. Bows and arrows were

* Percy (1607) in Arber edition of Captain John Smith's Works, LXV, Birmingham, 1884.

† Smith (1612) in *ibid.*, 68.

the hunter's implements, and there is no mention of the blow-gun, which was in use farther south.

Their houses were from thirty-five to fifty feet long and half as wide, and were made of poles bent over and fastened together at the top and covered with bark or mats. A small opening at one end served both as door and window, while another smaller hole in the roof answered for a chimney. The fire, produced by twirling a pointed stick in a hole in a block of wood, was in the center of the cabin, around the sides of which was a low platform covered with mats or skins, on which the inmates sat or lay with their feet to the fire. The furniture consisted chiefly of baskets of various sizes, mats and skins for bedding, a few pots of clay or soapstone, and a stone hatchet or two for hollowing out canoes and for other like purposes. Outside the door was a huge mortar, made from a log of wood, with a heavy stick for a pestle.

Children went entirely naked up to about the age of twelve years, while the ordinary summer dress of adults consisted simply of the breech-cloth or a short apron. To this was added in winter a mantle of deer skin or of turkey feathers neatly interwoven. These were ornamented with shells of wampum or bits of copper in the usual savage fashion. The men shaved their hair on the right side, and allowed it to hang down on the breast in a long lock on the left. From holes in the ears depended birds' claws, pieces of copper wire, or even a dead rat tied by the tail, or a small, live snake, which twined about the neck of the wearer, and at times would kiss his lips. Their bodies were painted in various patterns. About their necks were strings of pearls taken from mussels, and on their heads were feathers, snake rattles, or the head of a dead enemy, and, in short, according to Smith, "he is the most gallant that is the most monstrous to behold."* The women tattooed their bodies, limbs, and faces, and the girls were distinguished from the married women by having their hair cut short in front and at the sides.

The life of an Indian was a routine of eating, sleeping, and dancing, when not engaged in hunting or war. Here is the picture of these children of nature as drawn by Smith: "The men bestow their times in fishing, hunting, warres and such man-like exercise, scorning to be seen in any woman-like exercise, which is the cause that

* Smith (1612) in Arber edition of Captain John Smith's Works, 67. Birmingham, 1884.

the women be very painefull and the men often idle. The women and children doe the rest of the worke. They make mats, baskets, pots, morters, pound their corne, make their bread, prepare their victuals, plant their corne, gather their corne, bear all kinds of burdens, and such like."*

War was a pastime to the savage, and the greatest skill of the warrior was expended on his weapons. Chief among these were a bow and a quiver full of long arrows headed with stone, the spur of a turkey, or the bill of a bird. He carried a knife made from a reed, and a club or tomahawk headed with a deer's horn or with a long stone sharpened at both ends. For defense he had a round target of bark. The dead were scalped, and prisoners were tortured with every device of savage cruelty.

Time will not permit a description of their amusements, their religious ceremonies, or funeral rites. Suffice it to say that the bodies of the dead were either wrapt in skins and deposited in the ground or exposed on scaffolds until the bones fell apart, when they were gathered up and preserved in the houses. The old writers say nothing of any kind of coffin.

The history of the Nacochtanks and Tauxenents is lost in that of their more powerful neighbors. After Smith's voyage up the Potomac, in 1608, we hear no more of them until 1622, when a party from Jamestown, ascending the river in quest of supplies, stopped at a settlement on the south bank, at the mouth of Potomac creek. The chief here had no corn to spare, but said that "his mortal enemies," the Nacochtanks and Moyaones, on the other side of the river, had plenty, and offered the services of fifty warriors to go and help the English take it. The offer was accepted. The white and red raiders attacked Nacochtank, and after a stubborn fight eighteen of the Nacochtanks were killed and the remainder driven from their cabins, which were then plundered and burned.† This battle was probably fought on the slopes just across the navy-yard bridge.

Passing over minor occurrences, the next important event in the history of these tribes was the arrival of Lord Baltimore's colony on the Potomac in 1634. The Catholic missionaries who accompanied the expedition soon won the hearts of the simple-minded natives, who gladly accepted their teachings, and the chief of the Nacoch-

* Smith (1612) in Arber edition of Captain John Smith's Works, 67. Birmingham, 1884.

† Bozman, J. L. History of Maryland, II, 567. Baltimore, 1837.

tanks—called by the missionaries Anacostans—even expressed his desire to live among the whites and become one of them; but this lasted not long. The cupidity of the traders and the encroachments of the settlers led to reprisals, resulting finally in a condition of chronic warfare, in which, as usual, the Indians were the greater sufferers.

On the arrival of the English in 1634 they found the tribes along the whole Lower Potomac and Patuxent living in constant dread of the Susquesahanocs at the head of the Bay, whose incursions had become so frequent and destructive that the weaker tribes had already begun to abandon their settlements for a more secure position farther up the Potomac. The Susquesahanocs continued their inroads upon Indians and whites alike until 1652, in which year a treaty was made, only to be broken again in 1676, when the pressure of the terrible Iroquois on the north drove the Susquesahanocs themselves from their ancient homes and forced them down upon the frontiers of Maryland and Virginia, which they ravaged from the Patuxent to the James, until defeated and almost exterminated by Nathaniel Bacon in a decisive battle at the present site of Richmond. The result was a treaty of peace in 1677, by which all the Indians as far as the head of Chesapeake bay were brought under tribute to the whites.

Between the upper and nether mill-stones the original proprietors of the Potomac region had been well nigh ground out of existence, and the miserable remnant was still pursued with unrelenting hatred by the conquering Iroquois. The Tauxenents joined the few survivors of the Virginia Powhatans, who retired to the Pamunkey river, where about fifty mixed-bloods still remain, about twenty miles east of Richmond. The Maryland tribes gradually consolidated under the name of Piscataways, and removed, about the year 1700, to a new settlement on the lower Susquehanna, near Bainbridge, Pa. Here they became known as Conoys, and under this designation they afterward moved higher up the river and settled at Chenango, under the protection of the Iroquois, about 1740. In 1765 they numbered only about 150 souls. Still later they removed to the Ohio valley, where they joined their kindred, the Delawares. They made their last appearance as a separate tribe at a council held at Detroit in 1793.

While on a visit to the Cherokee reservation in North Carolina in the summer of 1887, the writer accidentally obtained some additional information which has never before appeared in print and which illustrates in a striking manner the shifting fortunes of the aboriginal tribes.

A young Cherokee named Samson Owl had married a woman of the Catawbas, once a powerful tribe, but now reduced to a feeble remnant of about a dozen families, living on the river of the same name in South Carolina. In talking one day with this woman about her own people she mentioned that a number of Indians formerly lived with them who were different from the Catawbas, being of a very surly disposition, and were called "Pamunks." On further questioning she stated that they were all descendants of, or related to, an Indian named John Mush, who had come from Virginia about fifty years before. They were unquestionably some of the Pamunkeys, already mentioned as still existing near Richmond. On asking what had become of them she said that they were constantly quarreling with the Catawbas—for the old tribe hatred still lives on—until some Mormon missionaries from the West arrived in that vicinity a few years ago, when the "Pamunks," glad of an opportunity to escape from their persecutors, embraced the new doctrines and followed their deliverers to the far-distant land of Utah, where the last descendants of the lordly Powhatans now read their lonely destiny in the waters of the Great Salt Lake.

The preceding papers were read before the Society at its regular meeting, April 13, 1889.

DISCUSSION.

Prof. F. W. PUTNAM, of the Peabody Museum of American Archaeology and Ethnology, Cambridge, Mass., responding to a request from the Chair, spoke substantially as follows:

I have listened with much pleasure to the several instructive papers which have been read this evening, and I am pleased to find myself among so many earnest workers. There is certainly no other place in the country where there are so many anthropologists actively engaged in research as here in Washington, and I must congratulate this Society upon its success, and particularly that its members have taken such an interest in local archæology. The papers to-night have shown how much there is to be done before we can fully understand the archæology of the Potomac valley. Mr. McGee has told us of the possibilities of the great antiquity of some of the objects exhibited to us this evening, and Mr. Wilson has called our attention to the fact that many of the implements found on the surface of the hills along the valley are of rude forms similar to those found in the glacial gravels. Mr. Proudfit has given us the results of his

examination of several old village sites and shown us that rude implements of paleolithic forms are commingled with neolithic or unquestionable Indian implements and ornaments. Mr. Reynolds has given us an account of his examination of the shell-heaps, the refuse-piles of the Indians during their more or less extended stay further down the valley, and Mr. Mooney has told us of the Indians who were here when this beautiful valley was first invaded by our own race. We have thus had as fair a presentation of the past as the known facts will permit, and the subject is fairly open for discussion, while there is a strong incentive for further and more systematic work, which I have no doubt will follow.

I may be permitted to state that all your problems seem to me to be identical with those which have long engaged my serious attention in New England. Similar shell-heaps, village sites, and places of manufacture occur there as here, and rude implements chipped from pebbles occur in special places there as they do here. The Piney Branch and Chain Bridge workshops here are of the same character as those of Marshfield and Wakefield, in Massachusetts, where rude implements in various stages of manufacture and in great numbers are found associated with chips and broken stones. As every perfectly chipped implement of the knife, spear, or arrow kind had to pass through all the stages noticed in these rude forms before the perfect implement was obtained, and as on many village sites which I have explored I have found nodules, chips, and rude implements of paleolithic forms associated with the highest type of chipped implements, with ornaments, and with pottery, I have been led to the belief that form alone can tell us but little of the time when an implement was made. It seems to me that all we can go by in this country is the fact that up to this time the implements found in the Eastern gravels are all of rude forms, very closely corresponding with those actually found in similar gravels in the Old World.

We have this ground for assuming that the people living on the Atlantic coast during the ice age and at its close had not reached the art of chipping stone into the delicate shapes which those of a later time attained to in the same region. While we can thus assume that all implements of this early period were of simple forms, we have so many facts showing that implements of similar forms were made in later times that we are not warranted in considering all rude implements as paleoliths, if by that term we mean implements first in time as well as in form. Certainly this is shown by the collection exhibited by Mr. Proudfit from an unquestionable village

site where he has found the rude and unfinished implements and the long, slender points chipped from the same kind of stones associated with polished implements, such as celts and hatchets, and also ornaments and pottery. In such a collection there is no evidence that one implement is older than another, and we seem to be forcing the facts when we make selections from such a place. From all I have heard about them, the hillside at Piney Branch and similar places seem to have been for centuries great sources of supply of proper materials from which implements were chipped by the people who lived along the valley. It is now for Mr. McGee to ascertain beyond doubt if the chipped stones found at those places date back to the glacial period, as he has intimated may be the case.

The instructive exhibition given by Mr. Wilson shows us how rude implements are scattered over the surface of the country, and many of them are unquestionably of great geological age; but for the reasons I have stated I must differ from my friend in the estimate of the value of form alone in indicating their age. In the museum at Cambridge I have arranged together as paleolithic implements only those unquestionably from the glacial gravels; but we also have there a remarkable collection found by Mr. Cresson in a rock-shelter in Delaware. In this shelter were several distinct layers or deposits, showing that the place had been successively used by man, and it is remarkable that in the lowest deposit all the implements are rudely chipped from argillite and closely resemble those found by Dr. Abbott in the Trenton gravel. This shelter gives an indication of successive periods in the development of the art of stone-chipping, which will prove of great importance in the study before us, and it is from such collections that we shall be able to determine the points at issue. Are there not similar places in the Potomac valley that will tell the story here? Systematic work is now required everywhere. It is no longer enough to pick things up on the surface. The shell-heaps should be examined inch by inch by vertical sections; the village sites should be systematically dug over; the ancient burial places in the valley must be found and explored, and a section should be made of the hillside at Piney Branch to see what is below the chipped stones on the surface. When these examinations have been made, as I have no doubt they will be, by the members of this Society we shall be able to read correctly the archæology of the valley, which has unquestionably been inhabited for a long period of time, and perhaps by predecessors of the people we know as the historic Indians.